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Growing RD Capacity
Training Research Administrators in Proposal Editing

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NORDP Great Lakes Regional Meeting • October 21, 2019 • Ann Arbor, Michigan

A Quick Check-In

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- Research Development
- Research Administration
- Both
- None

Agenda


Pre-Workshop
- Rationale
- Internal Pilot
Workshop
- Key Content
- Resources
Post-Workshop
- Survey
- Conclusions
- Next step

A Small Difference May Make a Big Impact

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Writing mistakes may cost fortune or life!

Rationale

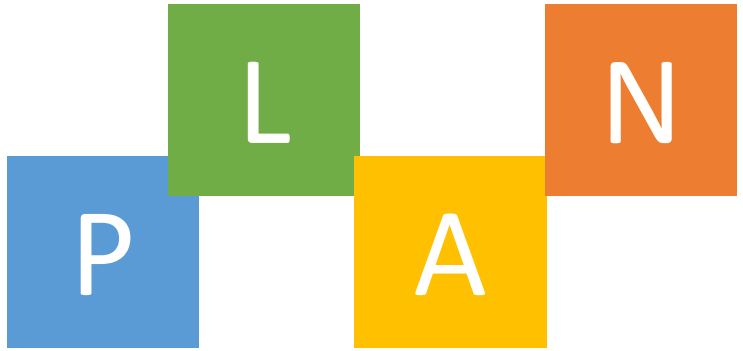
Pre-Workshop

- Support for faculty
- Limited Research Development professionals
- Target audience – Research Administrators
  - Early access
  - Professional development

Internal Pilot

Pre-Workshop

- Content development
  - Collaboration between two offices
  - Meetings
  - Document sharing on cloud
- Pilot workshop
  - Internal
  - Attendees from various units
  - Updates (title, content, style, etc.)



Workshop Detail

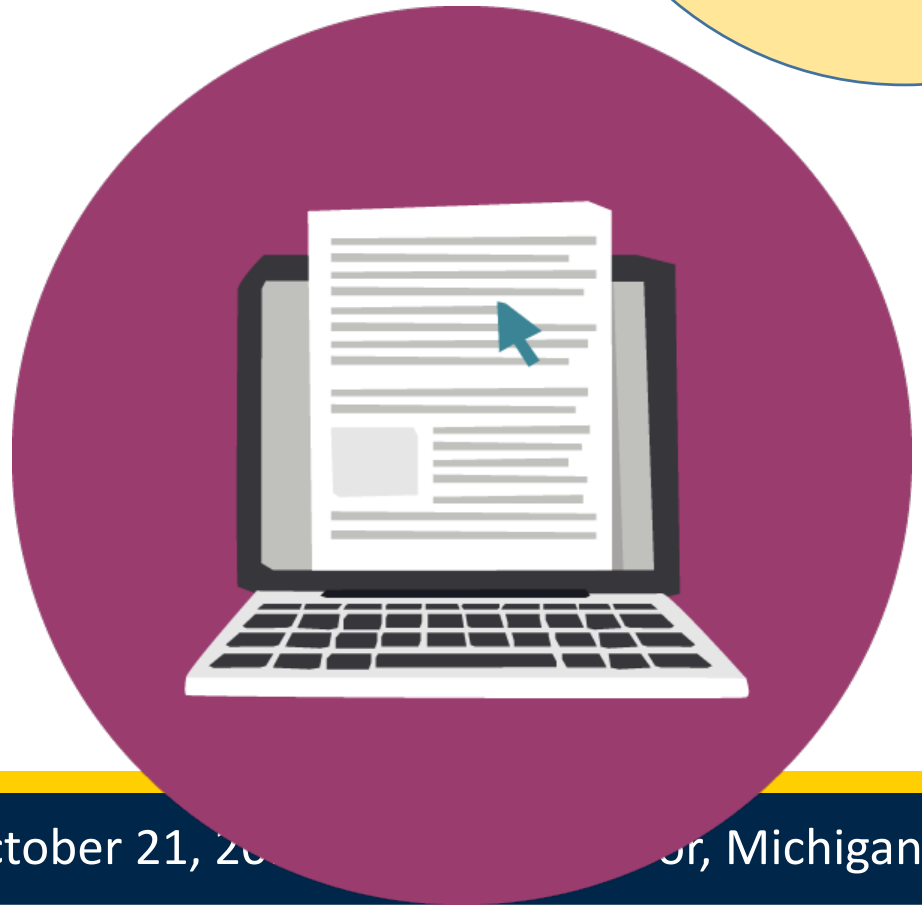
Workshop

- Title
- Duration
- Goal
- Content

Topics

Workshop

- Why grants should be edited
- Editing checklist & tips
- Grant components
- Grant editing example
- Logistics & working with faculty



Editing Checklist

Workshop Topics

Big Picture / Macro Issues	
	Organization and logical flow
	- Check headings - Check logic of and transitions between sentences, paragraphs, ideas, and sections
	Clarity in terminology and reduce jargon and acronyms
	Concise writing by cutting unneeded words, redundancies, and revising long/run-on sentences
	Consistency in the writing and style (e.g., capitalization, hyphenation, font style)
	Visually appealing and easy to skim (e.g., white space)
Small Details / Micro Issues	
	Grammar
	- Use active voice - Use first person - Check "a" vs "an" before acronyms/abbreviations - Check for subject/verb agreement - Fix long and run-on sentences
	Punctuation
	Spelling (e.g., commonly misused words), typos, and omissions
Other Issues	
	Figures and tables: - consecutive numbering - ensure text is legible - ensure figure/table is mentioned in text and placed in the appropriate location
	Acronyms: - ensure all acronyms are defined at the beginning of each section - verify correct and consistent use of acronyms - ensure acronym isn't listed if only used once - remove acronyms if many are used and it is difficult to read
	Formatting: - margin - font size & style - consistent spacing between paragraphs and before/after headings - consistent spacing after periods
	Page limits - ensure they are adhered to for all sections and edits do not put them over the limit

Big Picture

Small Picture

Other Issues

Big Picture Editing

Workshop

Topics

- Organization
- Clarity
- Conciseness
- Consistency
- Visual appeal

Small Detail Editing

Workshop Topics

- Grammar
- Punctuation
- Spelling

Other Editing

Workshop Topics

- Tables & figures
- Guidelines

Concise Writing

Workshop

Topics

- Cut unnecessary words
  - In order…
  - That
  - Adverbs (-ly)
  - Prepositions
- Remove redundancies
- Revise long sentences

Concise Writing Example

~~In order~~ to assess the patient–provider relationship, we will call ~~up~~ patients who have ~~very~~ high HbA1c levels and ask about their satisfaction, ~~because focusing on these patients will completely~~ ensure ~~that~~ we understand the provider relationship for high-risk patients ~~due to the fact that their HbA1c is so high.~~

To assess the patient–provider relationship, we will call patients who have high HbA1c levels and ask about their satisfaction. This will ensure we understand the provider relationship for high-risk patients.

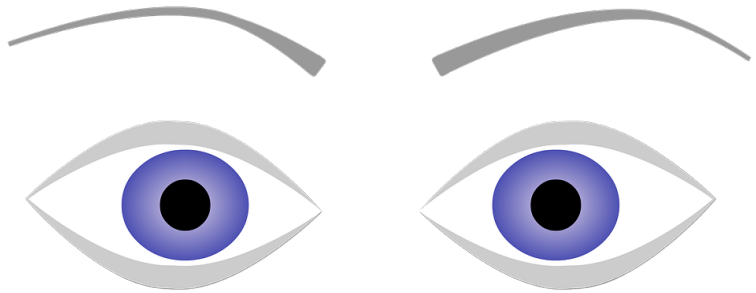
Formatting & Visual Appeal

Workshop

Topics

- White space is good!
  - Left aligned
  - Spaces between paragraphs
  - Indent paragraphs if no spacing

- Use underline or bold <u>sparingly</u> for emphasis



Save space by moving heading

Underline for emphasis

Indent further and/or include spaces between paragraphs

VS

Make aims stand out

Make separate “impact” paragraph with bolded “Impact” heading

SPECIFIC AIMS

Cardiovascular disease produces a state of chronic, low-grade inflammation in fat. Knockout or pharmacological inhibition of inflammatory pathways in rodents can disrupt the link between genetic- or diet-induced disease and blood pressure resistance, suggesting local inflammation is key in generating carbohydrate resistance to cells that regulate blood pressure. The role of inflammation in human heart failure is less clear: the link may be causally related or secondary to cell dysfunction or death. The alpha factor beta (αβ) transcriptional program is activated in fat, and may play an important role in the development of carbohydrate resistance. We recently reported that the αβ sensitive genes, *Qrk5* and *UffE3*, are increased at both the RNA and cell level in fat during poor diets in mice. Further, deletion of the *UffE3* gene caused mice to become partially resistant to the development of heart failure, carbohydrate resistance, high blood pressure and inflammation during high fat diets. We identified the *UffE3*/*Qrk5* activator, Renivol, which had been previously developed for the treatment of ulcers, cancer and high blood pressure. Administering this drug to fat mice produced weight loss and improved blood pressure and carbohydrate sensitivity, reduced inflammation and attenuated heart failure. A target of Renivol in rodents is the fat tissue where it increases energy via increased sensitivity to carbohydrates and increased activity of CBRT. Treating mice with Renivol led to an increase in HF-9 synthesis and secretion from cells and pre-cells, which was responsible for acute lowering of blood pressure via reduced carbohydrate output, leading to a decrease in cancer and cardiovascular outcomes.

In a recent study, we reported a randomized double blind, placebo-controlled clinical study of 56 patients (47 completed) with heart failure and breast cancer treated for 6 weeks with Renivol or placebo, which revealed a drug-induced statistically significant improvement in blood pressure and hightosamine between placebo and drug-treated patients. In addition, we identified a subset of responders (displaying a reduction in blood pressure greater than 0.5%), characterized by a distinct transcriptional pro
baseline and in response to Renivol treatment, as well as a transient increase in carbohydrat
weeks. In addition, the blood pressure lowering seen in Renivol-treated patients correlated wi
baseline heart rate levels. These responders also had improved diet sensitivity and reduction
we did not have full power to explore the reduction in fat carbohydrates in our proof of concep
preliminary data suggested that the patients who responded to the drug had higher reduction
fraction as measured by MRI, while fat also correlated to heart rate levels at baseline. These
prompted us to explore whether we can induce a sustained blood pressure lowering beyond 6 weeks, and
we can reliably identify responders according to baseline circulating heart rate levels in a prospective manner.
Our objective is to test this here. We propose to explore these questions with the following three specific aims:

Aim 1: To explore whether Renivol therapy can reliably lead to significant blood pressure lowering at 12-months compared to placebo. We predict that Renivol therapy will result in a higher percentage of patients who achieve a clinically meaningful drop in blood pressure at 12 months.

Aim 2: To explore whether Renivol therapy can reduce carbohydrates at 12 months compared to placebo. We hypothesize that carbohydrates as measured by MRI will be significantly decreased in our drug-treated subjects after 12 months on the study drug.

Aim 3: To comprehensively assess the molecular signature associated with Renivol therapy. These studies will provide new insights into the molecular basis for the metabolic changes that occur as a result of Renivol therapy in humans.

To address these questions, we will undertake a clinical study in which we will randomize 150 patients with heart failure with inadequate blood pressure control (>7%), carbohydrates (fraction >5.5%) and currently treated only with oral agents, to receive either Renivol 80 mg tid or placebo orally for a period of 12 months. Patients will be stratified for gender, and whether they have a normal or elevated heart rate level at baseline. We will ensure equal numbers of the stratification categories in the randomized patients. Patients will undergo tissue biopsy at baseline and 12 months, and an MRI at baseline and 12 months. Tissue biopsy samples and circulating cells will be studied for gene expression by RNAseq analyses before, during and after drug exposure. We will obtain biopsies in patients in each category voluntarily at baseline and 12 months to explore gene expression to determine differentially regulated genes by drug exposure as an exploratory endpoint.

Impact: These studies will provide an opportunity to explore the therapeutic potential of Renivol for heart failure and breast cancer and will allow us to determine if we can truly personalize the treatment of these conditions by evaluating inflammatory markers at baseline, and assessing the molecular effects of Renivol treatment in both tissue and circulating cells. Ultimately, this will have a positive impact on patients.

Left aligned

Not-so-Obvious Spelling Mistakes

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- Impotence vs. Importance
- Causality vs. Casualty
- Defiantly vs. Definitely
- Reagents vs. Regents (of the University of Michigan)
- Principle vs. Principal (Investigator)
- Moody vs. Mody (last name)
- Asses vs. Assess (verb)

Don’t just trust spell check!

Table Example

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Measures	Times
Patient Measures	
Primary outcome, medication adherence, measured 2 ways: patient self-report (past 7 days of behaviors), EMR query (prescription refill examination)	T0, T1, T2, T3
heart rate	T3
Demographics: age, sex, race, ethnicity, income, education, marital status, employment status	T0
Provider Measures	
Provider demographics: discipline, years in practice, sex, race	T0
Willingness to adopt intervention	T0
Fidelity to intervention	T3
Provider self-efficacy – 11 questions measure provider self-efficacy	T0, T3

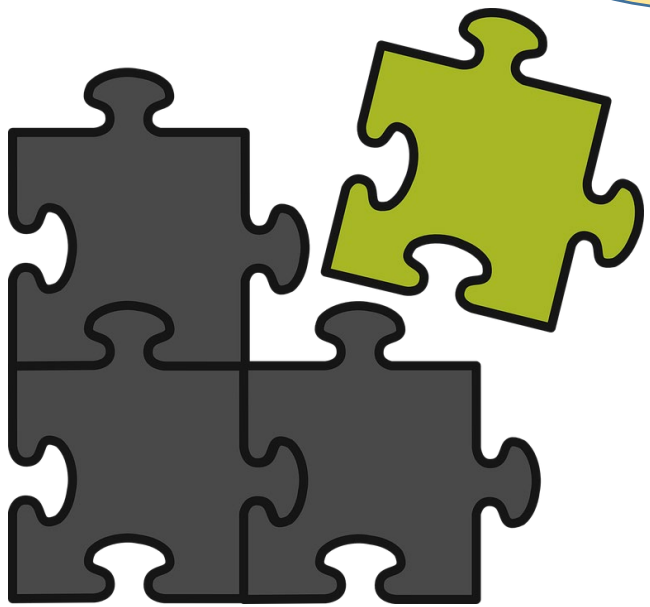
The examples provided in the workshop were extremely helpful.

Table X. Study Measures	T0	T1	T2	T3
Patient Measures				
Medication adherence	X	X	X	X
Clinical measures (blood pressure, weight, heart rate)	X	X	X	X
Demographics	X			
Provider Measures				
Provider demographics	X			
Willingness to adopt intervention	X			
Fidelity to intervention				X
Provider self-efficacy	X			X

Grant Components

Workshop Topics

- Dissection of NIH instructions
- NIH research grant documents
- Specific Aim page



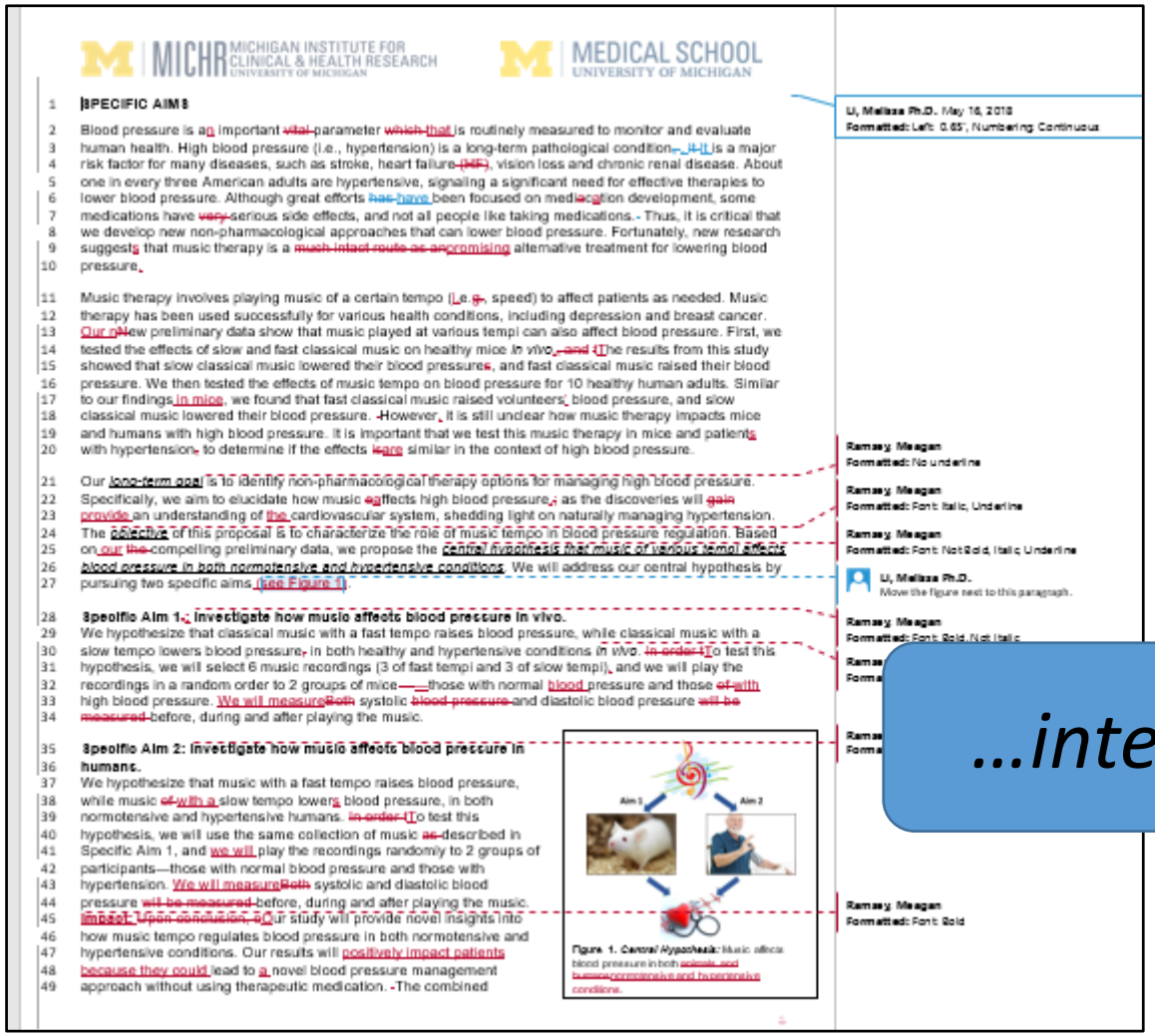
Audience Engagement

Workshop

- After the checklist walk-through
- Hands-on editing

Specific Aim Page Editing

Workshop



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SPECIFIC AIMS

Blood pressure is an important ~~vital~~ parameter ~~which~~ that is routinely measured to monitor and evaluate human health. High blood pressure (i.e., hypertension) is a long-term pathological condition. It It is a major risk factor for many diseases, such as stroke, heart failure (HF), vision loss and chronic renal disease. About one in every three American adults are hypertensive, signaling a significant need for effective therapies to lower blood pressure. Although great efforts ~~has~~ have been focused on medication development, some medications have ~~very~~ serious side effects, and not all people like taking medications. Thus, it is critical that we develop new non-pharmacological approaches that can lower blood pressure. Fortunately, new research suggests that music therapy is a ~~much intact route or compromising~~ alternative treatment for lowering blood pressure.

Music therapy involves playing music of a certain tempo (i.e. ~~s~~, speed) to affect patients as needed. Music therapy has been used successfully for various health conditions, including depression and breast cancer. Our ~~N~~new preliminary data show that music played at various tempi can also affect blood pressure. First, we tested the effects of slow and fast classical music on healthy mice *in vivo*. ~~and~~ The results from this study showed that slow classical music lowered their blood pressures, and fast classical music raised their blood pressure. We then tested the effects of music tempo on blood pressure for 10 healthy human adults. Similar to our findings in mice, we found that fast classical music raised volunteers' blood pressure, and slow classical music lowered their blood pressure. However, it is still unclear how music therapy impacts mice and humans with high blood pressure. It is important that we test this music therapy in mice and patients with hypertension, to determine if the effects ~~is~~are similar in the context of high blood pressure.

Our long-term goal is to identify non-pharmacological therapy options for managing high blood pressure. Specifically, we aim to elucidate how music ~~a~~affects high blood pressure, as the discoveries will ~~gain~~ provide an understanding of the cardiovascular system, shedding light on naturally managing hypertension. The objective of this proposal is to characterize the role of music tempo in blood pressure regulation. Based on our the compelling preliminary data, we propose the *central hypothesis that music of various tempi affects blood pressure in both normotensive and hypertensive conditions*. We will address our central hypothesis by pursuing two specific aims (see Figure 1).

Specific Aim 1: Investigate how music affects blood pressure in vivo.

We hypothesize that classical music with a fast tempo raises blood pressure, while classical music with a slow tempo lowers blood pressure, in both healthy and hypertensive conditions *in vivo*. ~~In order t~~To test this hypothesis, we will select 6 music recordings (3 of fast tempi and 3 of slow tempi), and we will play the recordings in a random order to 2 groups of mice——those with normal blood pressure and those ~~of~~ with high blood pressure. We will measure~~Both~~ systolic ~~blood pressure~~ and diastolic blood pressure ~~will be measured~~ before, during and after playing the music.

Specific Aim 2: Investigate how music affects blood pressure in humans.

We hypothesize that music with a fast tempo raises blood pressure, while music ~~of~~ with a slow tempo lowers blood pressure, in both normotensive and hypertensive humans. ~~In order t~~To test this hypothesis, we will use the same collection of music ~~as~~ described in Specific Aim 1, and we will play the recordings randomly to 2 groups of participants—those with normal blood pressure and those with hypertension. We will measure~~Both~~ systolic and diastolic blood pressure ~~will be measured~~ before, during and after playing the music. ~~Impact: Upon conclusion, o~~Our study will provide novel insights into how music tempo regulates blood pressure in both normotensive and hypertensive conditions. Our results will positively impact patients because they could lead to a novel blood pressure management approach without using therapeutic medication. The combined

Figure 1. Central Hypothesis: Music affects blood pressure in both ~~animals and humans~~normotensive and hypertensive conditions.

Li, Melissa Ph.D., May 16, 2018
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Ramsey, Meagan
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Ramsey, Meagan
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Li, Melissa Ph.D.
Move the figure next to this paragraph.

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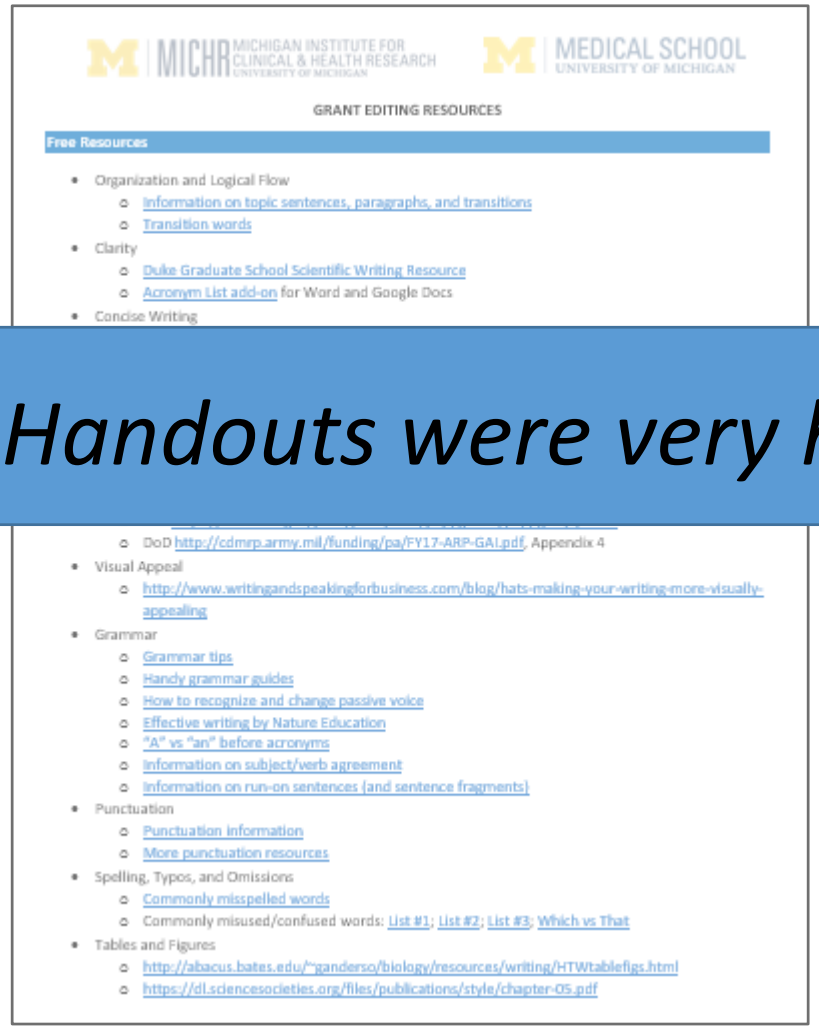
…interactive portion was great

Take-Home Materials

Workshop

- ✓Specific Aim page with edits
- ✓Presentation slides
- ✓Grant editing checklist
- ✓Editing resources sheet

Resources



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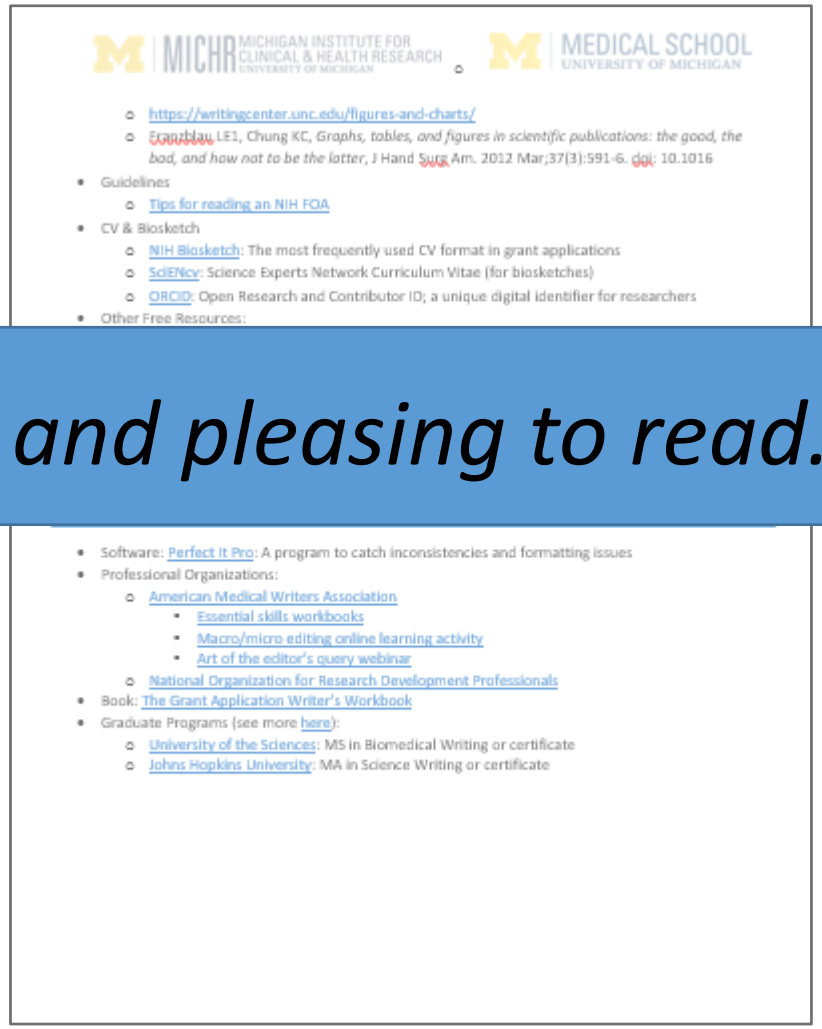
GRANT EDITING RESOURCES

Free Resources

- Organization and Logical Flow
  - Information on topic sentences, paragraphs, and transitions
  - Transition words
- Clarity
  - Duke Graduate School Scientific Writing Resource
  - Acronym List add-on for Word and Google Docs
- Concise Writing
  - DoD http://cdmrp.army.mil/funding/pa/FY17-ARP-GAI.pdf, Appendix 4
- Visual Appeal
  - http://www.writingandspeakingforbusiness.com/blog/hats-making-your-writing-more-visually-appealing
- Grammar
  - Grammar tips
  - Handy grammar guides
  - How to recognize and change passive voice
  - Effective writing by Nature Education
  - "A" vs "an" before acronyms
  - Information on subject/verb agreement
  - Information on run-on sentences (and sentence fragments)
- Punctuation
  - Punctuation information
  - More punctuation resources
- Spelling, Typos, and Omissions
  - Commonly misspelled words
  - Commonly misused/confused words: List #1; List #2; List #3; Which vs That
- Tables and Figures
  - http://abacus.bates.edu/~ganderso/biology/resources/writing/HTWtablefigs.html
  - https://dl.sciencesocieties.org/files/publications/style/chapter-05.pdf



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- https://writingcenter.unc.edu/figures-and-charts/
- Franzblau LE1, Chung KC, *Graphs, tables, and figures in scientific publications: the good, the bad, and how not to be the latter*, J Hand Surg Am. 2012 Mar;37(3):591-6. doi: 10.1016
- Guidelines
  - Tips for reading an NIH FOA
- CV & Biosketch
  - NIH Biosketch: The most frequently used CV format in grant applications
  - SciENcv: Science Experts Network Curriculum Vitae (for biosketches)
  - ORCID: Open Research and Contributor ID; a unique digital identifier for researchers
- Other Free Resources:
- Software: Perfect It Pro: A program to catch inconsistencies and formatting issues
- Professional Organizations:
  - American Medical Writers Association
    - Essential skills workbooks
    - Macro/micro editing online learning activity
    - Art of the editor's query webinar
  - National Organization for Research Development Professionals
- Book: The Grant Application Writer's Workbook
- Graduate Programs (see more here):
  - University of the Sciences: MS in Biomedical Writing or certificate
  - Johns Hopkins University: MA in Science Writing or certificate

Handouts were very helpful and pleasing to read.

Survey

Workshop

Sessions

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Date	# of Attendees	Location
August, 2018	32	Medical Campus
September, 2018	19	NCRC*
January 10, 2019	61	Medical Campus
February 7, 2019	43	Medical Campus
June 10, 2019	33	NCRC*
Total	**188**	

**NCRC: North Campus Research Complex*

Surveys

Post-Workshop

- Format
  - Paper
  - Online

- 117 surveys
  - 62% response rate

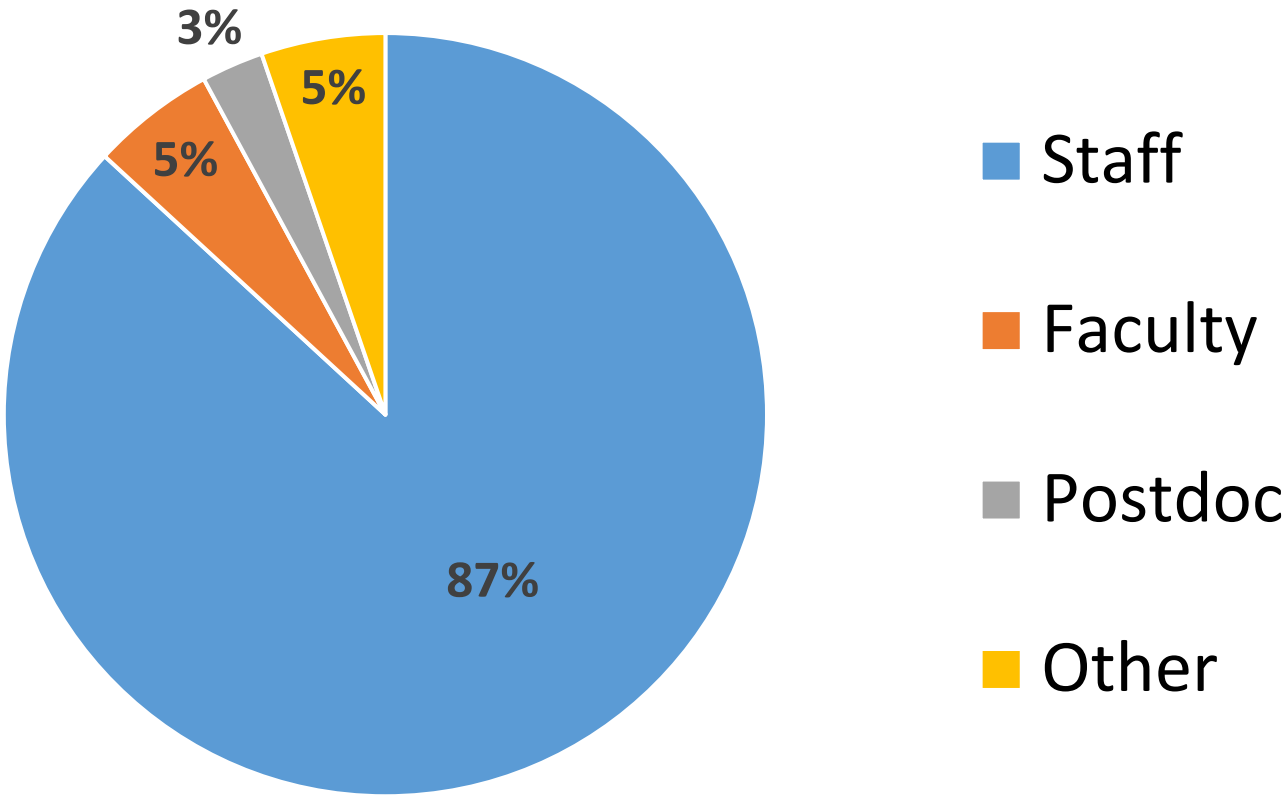
Survey Questions

Post-Workshop

- What is your status?
- Years of experience editing scientific/non-scientific portion
- Intend to start offering editing assistance to faculty
- After learning specific editing strategies, confidence in ability to edit
- Interested in attending an advanced proposal editing workshop?
- Comments

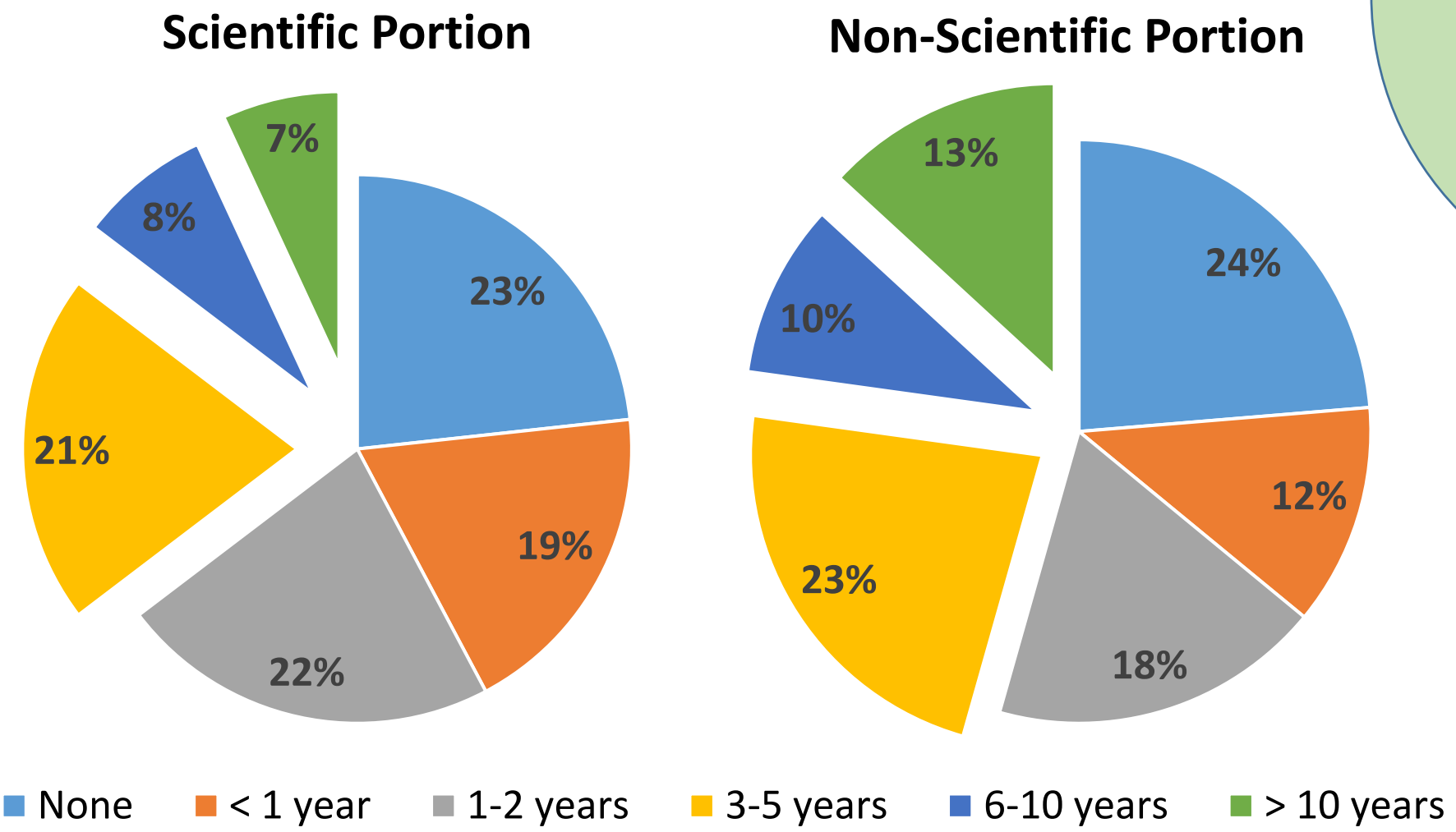
Demographics

Post-Workshop



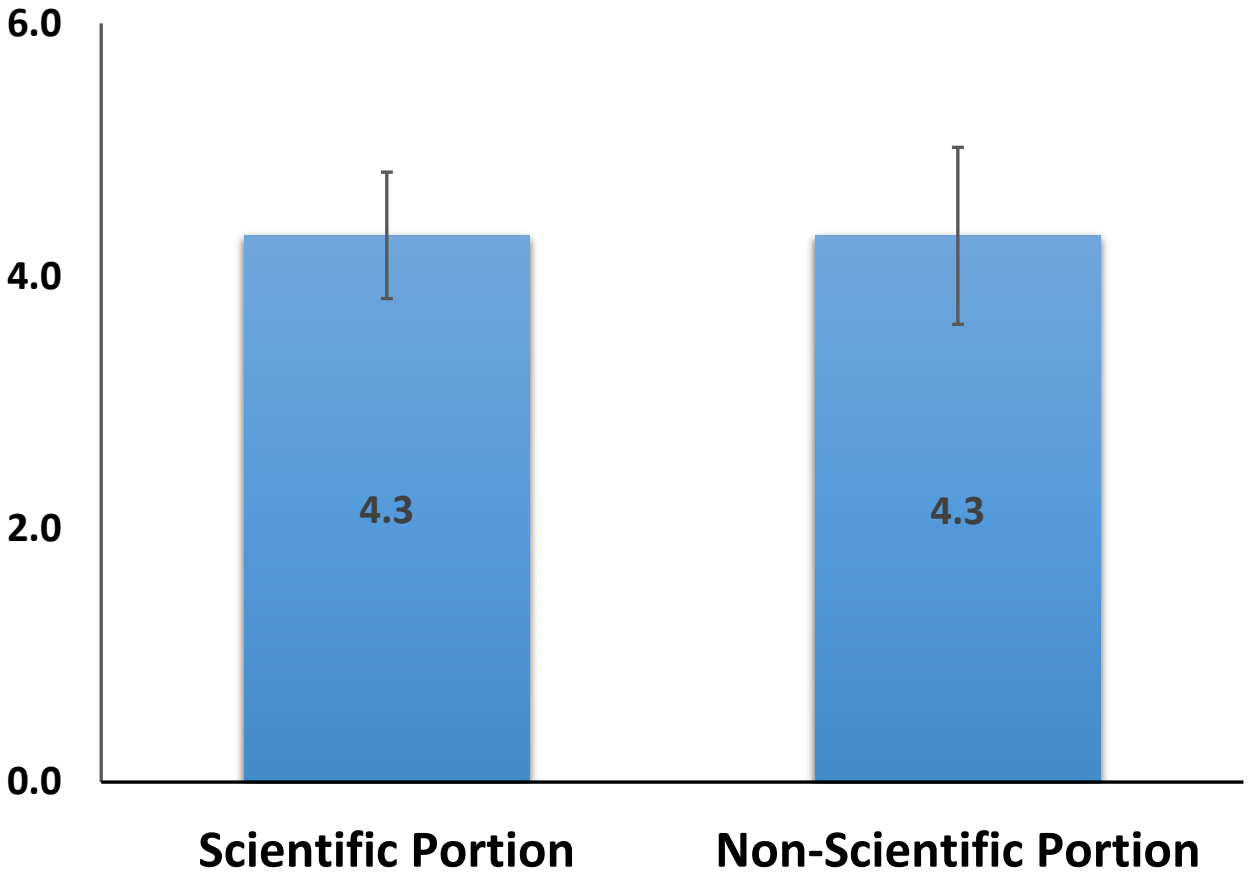
Years of Editing Experience

Post-Workshop



Confidence Building

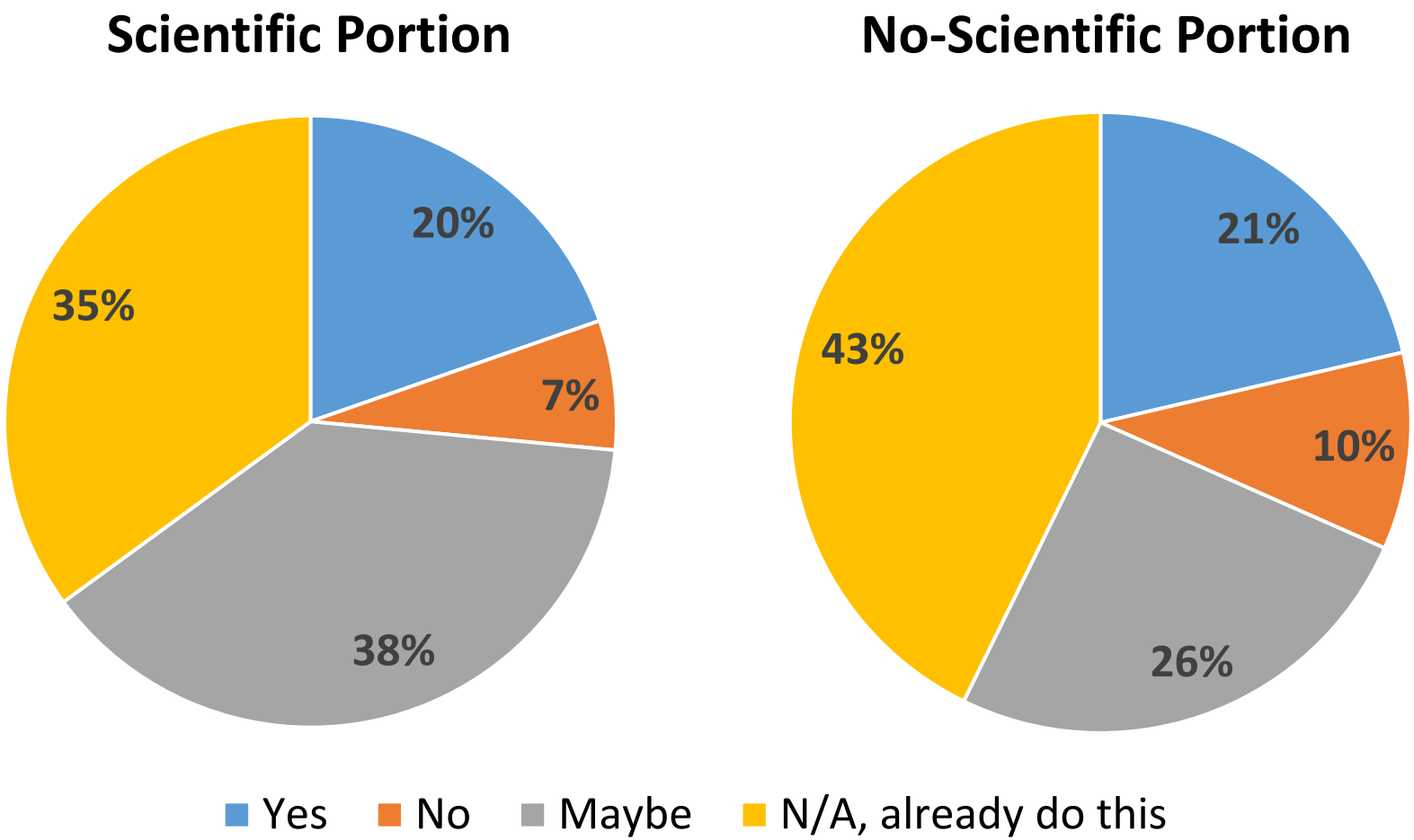
Post-Workshop



Response ratings:
Strongly agree = 5
Somewhat agree = 4
Neither agree nor disagree = 3
Somewhat disagree = 2
Strongly disagree = 1

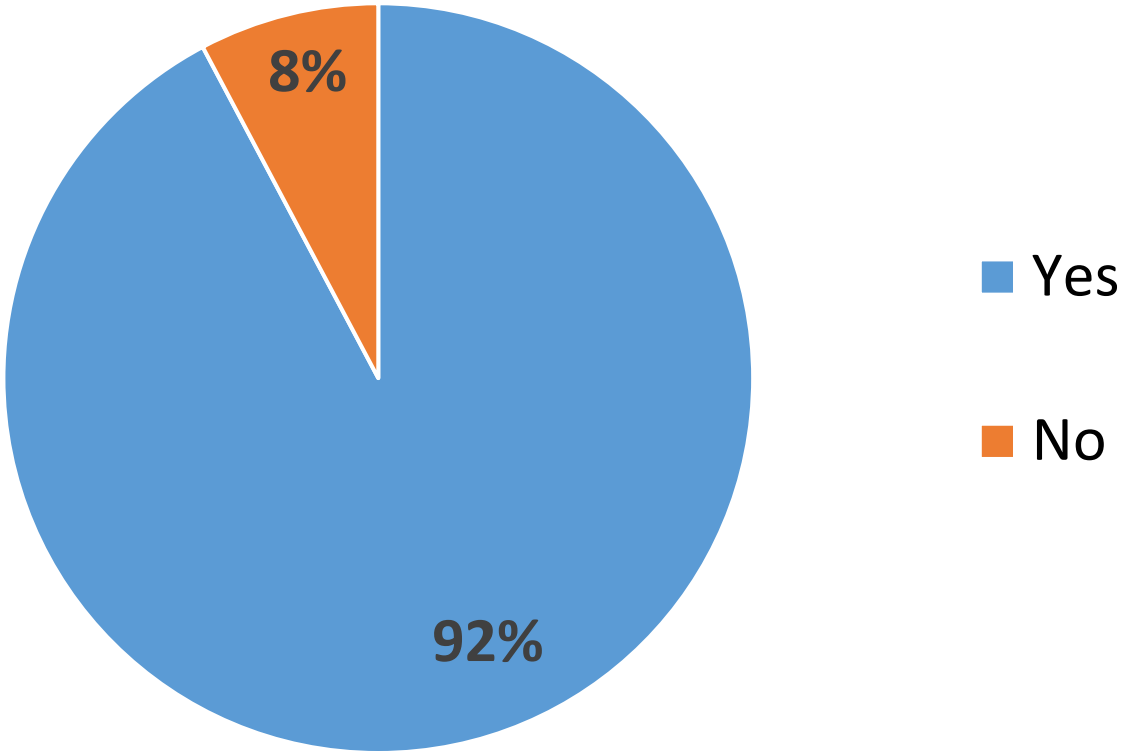
Intending to Offer Editing Assistance

Post-Workshop



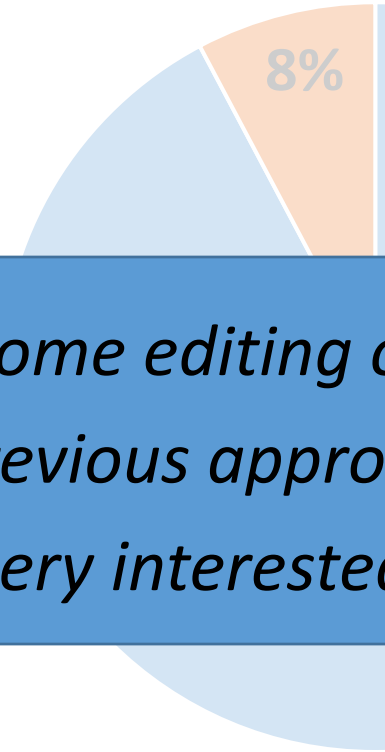
Attending an Advanced Workshop?

Post-Workshop



Attending an Advanced Workshop?

Post-Workshop



I have done some editing on an 'as needed' basis. The workshop confirmed - for me - my previous approaches to editing proposals and publication drafts. I would be very interested in more advanced editing workshops. Thanks!

Conclusions

- Editing skills are learnable
- The entry-level editing training is effective and helpful
- Many research administrators show interest in proposal editing
- Many have been editing for faculty
- A more advanced workshop is in high demand

Lessons Learned

- Emphasize the content level in the announcement
- Leave buffer time for “active” participants
- Clarify objectives at the beginning
- Study audience

Potential Next Step: Online Module

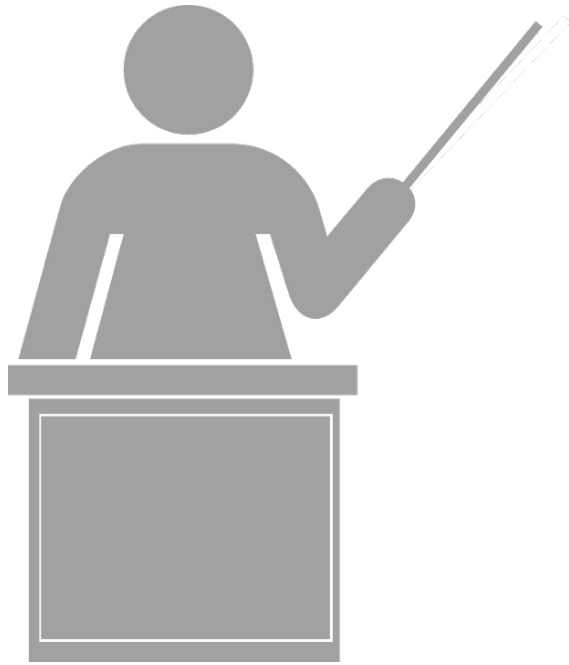
Post-Workshop

- Convenient access
- Flexible learning
- Broad impact
- Cost-effectiveness

Potential Next Step: Advanced Workshop

Post-Workshop

- Proposal components
  - In-depth dissection
  - Rigor & transparency
- Evaluation criteria
- Multiple-project grants
- Logistics



Acknowledgement

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Pre-workshop

- Meagan Ramsey
- Jill Jividen
- Beth LaPensee
- Brenda Phillips
- Heather Offhaus
- Becky Youmans
- Dave Nassar
- Judy Smith
- Jocelyn Webber

Workshop

- Paula Van Velden
- Morgan Hayward
- Jane Bugden

Post-workshop

- Jane Bugden
- Heather Offhaus

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